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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,945	12/30/2003	Hongyuan Chen	884A.0034.U1(US)	8614
29683 7590 07/22/2008 HARRINGTON & SMITH, PC 4 RESEARCH DRIVE SHELTON, CT 06484-6212				
EXAMINER ZHU, BO HUI ALVIN				
ART UNIT 2619		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/749,945

**Applicant(s)**

CHEN, HONGYUAN

**Examiner**

BO HUI A. ZHU

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3, 5, 10, 12, 13, 15, 17, 18, 21 - 24 and 37 - 50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1, 3, 5, 10, 12, 13, 15, 17, 18, 21 - 24 and 37 - 50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. The amendment submitted with the RCE filed on April 25, 2008 has been entered.

Claims 1, 3, 5, 10, 12, 13, 15, 17, 18, 21 - 24, 37 - 50 are pending.

Claims 1, 3, 5, 10, 12, 13, 15, 17, 18, 21 - 24, 37 - 50 are rejected.

***Claim Rejections - 35 USC § 112 1<sup>st</sup> paragraph***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 5, 37, 38, 40, 44, 47 and 48 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 37 and 44, the claimed limitation "the packet is transmitted ... using a frequency dependent upon a frequency hopping sequence determined by *the address of the destination device* and with a phase dependent upon *the clock offset of the destination device*" was not described in the original specification.

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Regarding claims 38 and 47, the claimed limitation "the topology of the scatternet *reverts from the second network topology back to the first network topology*" was not described in the original specification.

Regarding claims 5 and 40, the claimed limitations "the first network topology of the scatternet is defined at initiation of the scatternet" "the first network topology ... is not subsequently substantially redefined" "the network direct radio communications link augments the defined topology of the scatternet by the addition of an extra link to the set of links but does not otherwise add or remove links from the set of links" were not described in the original specification. Similar argument applies to claim 48 as the original specification never explicitly described "the direct radio communication link does not redefine the network topology".

***Claim Rejections - 35 USC § 112 2<sup>nd</sup> paragraph***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5, 40 and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 5 and 40, it is not clear what the limitation "the network direct radio communications link augments the defined topology of the scatternet by the addition of an extra link to the set of links but does not otherwise add or

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remove links from the set of links” means. It starts with reciting adding an extra link to augment the topology of the scatternet but then recites NOT adding any links to change the topology of the scatternet. In addition to that, the claim starts with “the topology of the scatternet is defined and not subsequently redefined” but then recites “augmenting the defined topology of the scatternet by addition of an extra link”.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 3, 5, 10, 12, 13, 15, 22 – 24, 37, 39 and 40 - 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Larsson et al. (US 6,751,200).

(1) with regard to claims 1, 22 and 23:

Larsson et al. discloses a system comprising: receiving a packet at a first device in a first piconet of a scatternet comprising multiple piconets (e.g. node M8 in piconet 9 in Fig. 2; a scatternet comprising piconets 1 – 7 and 9 – 12 has a network topology which connects all the nodes of the piconets; column 5, lines

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44 - 50), wherein the packet is for delivery to a destination device in a second piconet of the scatternet and wherein the scatternet has a first network topology (any node shown in Fig. 2 that is in a piconet that is not occupied by the first device can be the destination device, for example, a slave node in piconet 7; the scatternet before new piconets are created has the first topology); determining whether it is possible to modify the first network topology by creating a direct radio communications link, between the first device and the destination device, that adds a short-circuit to the first network topology and converts the topology of the scatternet from the first network topology to a second, different, network topology (e.g. see Fig. 7 step 720 i.e. determining whether it is possible to route packets through a new link or short-circuit; establishing a new link changes the topology of the network; the scatternet after new piconets are created has the second topology); if it is not possible to add the short-circuit, forwarding the packet within the first network topology of the scatternet (NO branch out of step 720 i.e. new link is not possible, send packet through existing piconet(s)); and if it is possible to add the short-circuit: creating a new direct radio communications link between a the first device and the destination device that adds the short-circuit to the first network topology and converts the topology of the scatternet from the first network topology to a second, different, network topology (YES branch out of step 720 i.e. if new link is possible, send packets through the new link); and transmitting the packet via the new direct radio communications link (e.g. a link created by piconet 8 which connects the two node as shown on Fig. 2

creates a new link or a short-circuit between piconet 9 and 7) of the second network topology (column 6, lines 48 – 63).

(2) with regard to claims 3 and 39:

Larsson et al. discloses all of the subject matter as discussed in the rejection of claim 1 and further discloses adds a third piconet that connects the first piconet and the second piconet to the first network topology to create the second network topology (column 5, lines 1 – 10; column 6, lines 16 – 20; in the case where the first device is node M8 of piconet 9, and the destination node is a slave of piconet 7, a direct link between the slave of piconet 9 and the slave of piconet 7 can be established by establishing a third piconet, piconet 8, as shown in Fig. 2 while the existing communication links within piconet 9 are maintained).

(3) with regard to claims 5 and 40:

Larsson et al. discloses that the first network topology of the scatternet is defined at initiation of the scatternet as a set of links between devices (topology of the scatternet before new piconets are created) and is not subsequently redefined except for devices leaving and joining the scatternet and wherein creating the new direct radio communications link augments the defined topology of the scatternet by the addition of an extra link to the set of links but does not otherwise add or remove links from the set of links (adding a new piconet changes the topology of the scatternet).

(4) with regard to claims 10 and 41:

Larsson et al. discloses the packet comprises an address of the destination device (inherent because any packet destined to a destination must

contain the address information of the destination in order to know where to deliver the packet) and wherein determining whether it is possible to modify the first network topology by adding a short-circuit uses the identity of the destination device (column 7, lines 21 – 25; because it has to determine if the destination can be reached at all, the identify of the destination must be used); and determining if the destination device is within radio communication range of the first device (column 2, lines 48 – 51; column 7, lines 26 – 30).

(5) with regard to claims 12 and 42:

Larsson et al. further discloses that the first device maintains a list of devices within radio communication range (column 2, lines 65 – 68).

(6) with regard to claims 13 and 43:

Larsson et al. further discloses the list comprises, for each device within communication range, an address and a clock offset (column 2, lines 65 – 68; BD\_ADDR is the address and the internal clock value is the clock offset).

(7) with regard to claim 15:

Larsson et al. further discloses the first device determining whether the destination device is included in the list (column 3, lines 3 – 6).

(8) with regard to claim 24:

Larsson et al. discloses adding an address of the first device to the packet before forwarding it (column 3, line 52; having IP over the Bluetooth link layer would require Bluetooth devices to add their addresses to the packets they send).

(9) with regard to claims 37 and 44:



Larsson et al. discloses the packet is transmitted via the new direct radio communications link of the second network topology to the destination device (725, Fig. 7) using a frequency dependent upon a frequency hopping sequence determined by the address of the destination device and with a phase dependent upon the clock offset of the destination device (inherent to communications based on Bluetooth).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 17, 18, 38 and 45 – 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsson et al. (US 6,751,200) in view of Isumi (US 5,815,816).

(1) with regard to claims 17, 18, 45, 46, 48 and 49:

Larsson et al. discloses all of the subject matter as discussed above but fails to disclose that the direct radio communications link is temporary; and the direct radio communications link is released after a predetermined period of inactivity.

Isumi teaches that temporarily establishing a connection and releasing the connection after a predetermined period of inactivity in the connection (column 13, line 64 – column 14, line 3).

It would have been desirable to temporarily establishing a connection and releasing the connection after a predetermined period of inactivity in the connection because it would make system resource utilization more efficient. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method as taught by Isumi in the system of Larsson et al.

(2) with regard to claims 38, 47 and 50:

Larsson et al. discloses transmitting the packet over the direct radio communication link as discussed above.

Larsson et al. does not disclose releasing the direct radio communication link after the packet has been transmitted and reverting the topology of the scatternet from the second network topology to the first network topology.

Isumi teaches that temporarily establishing a connection and releasing the connection after a predetermined period of inactivity in the connection (column 13, line 64 – column 14, line 3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Larsson et al. so that the direct radio communications link is released when no packets need to be transmitted to revert the topology of the network in order to make system resource utilization more efficient.

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Larsson et al. (US 6,751,200) in view of Langberg et al. (US 5,852,630).

(1) with regard to claim 21:

Larsson et al. discloses all of the subject matter as discussed in the rejection of claim 1. Larsson et al. however does not teach using a memory embodying a computer program for performing the method of claim 1.

Langberg et al. teaches a method for a transceiver warm start activation procedure can be implemented in software stored in a computer-readable medium. The computer-readable medium is an electronic, magnetic, optical, or other physical device or means that can contain or store a computer program for use by or in connection with a computer-related system or method (column 3, lines 51-65). Using a computer readable medium with program instruction code would be desirable because it would perform the same function of using hardware but offer the advantage of less expense, adaptability and flexibility. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the limitation as taught by Langberg et al. into the system of Larsson et al. so as to reduce cost and improve the adaptability and flexibility of the logic simulation.

***Response to Arguments***

11. Applicant's arguments with respect to claims 1, 3, 5, 10, 12, 13, 15, 17, 18, 21 – 24 have been considered but are moot in view of the new ground(s) of rejection necessitated by the amendments to the claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BO HUI A. ZHU whose telephone number is (571)270-1086. The examiner can normally be reached on Mon-Thur 10am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571)272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BZ  
Examiner  
July 16, 2008

/Hassan Kizou/  
Supervisory Patent Examiner, Art Unit 2619